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| 10/063,798 | 05/14/2002 | Mohamed El-Demerdash | Gems0178/YOD | 2716 |
| 28046 | 7590 | 06/21/2006 | EXAMINER | |
| FLETCHER, YODER & VAN SOMEREN P. O. BOX 692289 HOUSTON, TX 77269-2289 | | | FERRIS, DERRICK W | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2616 | |

DATE MAILED: 06/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/063,798

Applicant(s)

EL-DEMERDASH ET AL.

Examiner

Derrick W. Ferris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-23 and 25-71 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-23 and 25-71 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 May 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. This Office action is in response to applicant's paper filed 4/27/2006. **Claims 1-3, 5-23, and 25-71** as amended are still in consideration for this application.
2. Examiner **withdraws** the drawing objection(s). In particular, the examiner does not agree with applicant that the upper portion of the figure 1 shows labels for the respected reference characters for the drawings filed 5/14/2002 but in the interests of advancing prosecution for the case the examiner notes that one skilled in the art might be able to conclude the labels based on actual structure presented in the drawing. As such, the objection is withdrawn.
3. The examiner **withdraws** the objection(s) to the specification and thanks applicant for making the necessarily corrections.
4. The examiner does **not withdraw** the anticipated rejection to *Heiserholt* and corresponding rejections. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the "distinct" specific physical structure such that the loopback may be separate from the connector assembly and that each master-slave may have an individual loopback communications link as illustrated e.g., in applicant's figure 11 and in view of applicant's arguments in their remarks on page 15) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). As such, the examiner notes that at least the central bus 44 which is connected between the master

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station and slave stations and thus acts as a safety loopback. In particular, since the central bus is used to control the components, the bus acts as a safety loopback. Specifically, applicant's paragraph 72 teaches that the safety loopback is used for sending/receiving commands thus meeting the above interpretation of a safety loopback.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. **Claims 1, 2-3, 6-10, 21-23, 36-41, 43, and 53-55** are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,198,287,287 B1 to *Heiserholt et al.* ("*Heiserholt*").

As to **claim 1**, see e.g., figure 2 where a master node is taught as CAN master 42.

A slave node for each of a plurality of components of the medical the medical imaging system are taught e.g., as nodes 24 and 30. In particular, in view of figure 1, nodes 24 and 30 represent a plurality of components in a HF shielded room thus meeting a reasonable but broad interpretation of the recited claim language. Note that other nodes are further connected on the bus as shown e.g., in figure 1. The uniform communications protocol between the master and each of the slave nodes is the CAN protocol, see e.g., column 3, lines 41- 67.

As to **claim 2**, see e.g., column 3, lines 41- 67 with respect to the CAN protocol.

As to **claim 3**, see e.g., figure 3 where the CAN bus 44 has both a “H” and “L” portion.

As to **claims 6-9**, *Heiserholt* discloses a medical image system and components of a medical image system including image acquisition, image processing, user interaction, and monitoring components, see e.g., column 2, lines 52 to column 3, line 30.

As to **claim 10**, the master node is the apparatus control computer thus comprising control circuitry.

As to **claim 21**, see similar rejection to claim 1.

As to **claim 22**, see similar rejection to claim 2.

As to **claim 23**, see similar rejection to claim 3.

As to **claim 36**, see similar rejection to claim 1.

As to **claim 37**, the apparatus control computer 42 is used to manage the medical imaging system which includes operating the system.

As to **claim 38**, see similar rejection to claim 9.

As to **claim 39**, the medical imaging system is efficiently managed since the CAN protocol is used.

As to **claim 40**, since the CAN protocol is used there is communications compatibility between devices.

As to **claim 41**, see similar rejection to claim 2.

As to **claim 43**, see similar rejection to claim 3.

As to **claim 53**, see similar rejection to claim 1.

As to **claim 54**, see similar rejection to claim 6.

As to **claim 55**, see similar rejection to claim 8.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 11, 12, 14, 15, 31, and 51** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287, 287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view of U.S. Patent No. 5,784,547 A to *Dittmar et al.* ("*Dittmar*").

As such to **claim 11-12 and 14**, *Heiserholt* discloses the CAN protocol but may not specifically disclose fault sensing system to identify component faults at the slave nodes wherein the fault-sensing system has a critical-response time, and comprises a safe mode backup system.

Dittmar teaches the further recited limitation above at column 4, lines 16-30. In particular, *Dittmar* teaches switching over to second bus if a first bus fails thus teaching a reasonable but broad interpretation of identifying component faults at slave nodes. In particular, different types of faults are detected such as a cyclical function monitoring thus teaching an message-response system having a critical response time. Specifically, a message report is sent to all nodes once an error is detected. The safe mode backup system is the other bus.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Heiserholt* by clarifying fault detection for a CAN protocol.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to perform fault detection and correction. In particular, *Dittmar* cures the above-cited deficiency by providing the above motivation found at the abstract.

As such to **claim 15**, *Heiserholt* discloses the CAN protocol but may not specifically disclose a component control system having a timed-component-response system.

Dittmar teaches the further recited limitation in the background. In particular, *Dittmar* teaches waiting for an acknowledgment within a maximum time period (time out) thus teaching a reasonable but broad interpretation of a timed-component-response system.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Heiserholt* by clarifying fault detection for a CAN protocol.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be perform fault

detection and correction. In particular, *Dittmar* cures the above-cited deficiency by providing the above motivation found in the background.

As to **claim 31**, see similar rejection to claim 15.

As to **claim 51**, see e.g., step 3 at e.g., column 2, lines 55-65 which teaches a maximum response time.

9. **Claims 11-14, 28, 29, 44, 46, 47, and 50** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287,287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view of U.S. Patent No. 5,404,465 A to *Novakovich et al.* ("*Novakovich*").

As such to **claim 11-14**, *Heiserholt* discloses the CAN protocol but may not specifically disclose fault sensing system to identify component faults at the slave nodes wherein the fault-sensing system has a critical-response time, periodically monitoring the message and comprises a safe mode backup system.

Novakovich teaches the further recited limitation above at figure 1 and the Abstract. In particular, *Dittmar* teaches switching over to second bus if a first bus fails thus teaching a reasonable but broad interpretation of identifying component faults at slave nodes. In particular, *Novakovich* teaches a fault detection method where periodic Master test packets are sent to each slave and a response is then sent back from each of the slave devices where if one of the responses is not received correctly then a fault is detected, see e.g., the Abstract and figure 1.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Heiserholt* by clarifying fault detection for a CAN protocol.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to perform fault detection and correction. In particular, *Novakovich* cures the above-cited deficiency by providing the above motivation found at the abstract.

As to **claim 28**, see similar rejection to claim 13.

As to **claim 29**, see similar rejection to claim 12.

As to **claim 44**, see similar rejection to claim 11 where the event driven message is either the Master or Slave packets.

As to **claim 46**, see similar rejection to claim 11.

As to **claim 47**, see similar rejection to claim 13.

As to **claim 50**, see similar rejection to claim 11.

10. **Claims 47, 48, 49, 51, and 52** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287, 287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view of U.S. Patent No. 6,915,444 B2 to *Vasko et al.* ("*Vasko*").

As to **claim 47**, *Heiserholt* discloses the CAN protocol but may not specifically disclose transmitting a periodic status message.

Vasko teaches the further recited limitation above at figures 11 and 17. In particular, note that a safety message is transmitted periodically between a producer 80 (i.e., a master station) and a consumer 82 (i.e., a slave station), thus teaching the above claim limitation. See also, column 14, lines 61-63.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Heiserholt* by including a safety protocol.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to perform fault detection and correction. In particular, *Vasko* cures the above-cited deficiency by providing the above motivation found at column 2, lines 31-39. Examiner also notes a reasonable expectation of success since a CAN protocol is supported by both references, see e.g., column 4, line 45 of *Vasko*.

As to **claim 48**, in addition to the reasoning for claim 47, the periodic status message is the safety message, see e.g., figure 11. As such, a periodic timer 86 is set thus further teaching a timed-response request.

As to **claim 49**, if an error is detected such that the consumer (i.e., slave node) does not response to the timed-response request message as requested, then the consumer transitions into a safe state, see e.g., box 134 in figure 18 and column 15, lines 1-11.

As to **claim 51**, the command is the safety message and the acknowledgment is the command verification, see e.g., figure 11.

As to **claim 52**, the maximum response time is the periodic timer 86, see e.g., figure 11.

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11. **Claims 5, 25, and 42** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287,287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view of An introduction to CANopen to *Farsi et al.* ("*Farsi*").

As such to **claim 5**, *Heiserholt* discloses the CAN protocol but does not specifically teach CAN Open, see e.g., column 3, lines 41- 67.

Heiserholt is silent or deficient to the further limitation of the CAN Open protocol.

Farsi teaches the further recited limitation above at e.g., left-hand column on page 161.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Heiserholt* by clarifying that the CAN protocol is the CAN Open protocol.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to make it possible for devices of different types and markings to be integrated together and to communicate with each other. In particular, *Farsi* cures the above-cited deficiency by providing a motivation found at e.g., left-hand column on page 161, second full paragraph.

As to **claim 25**, see similar rejection to claim 5.

As to **claim 42**, see similar rejection to claim 5.

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12. **Claims 16-19, 26-27, 30, 32-34, 44, 45, and 50** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287,287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view of U.S. Patent No. 6,907,485 B2 A to *White, III et al.* ("*White*").

As such to **claim 16**, *Heiserholt* discloses the CAN protocol but may not specifically teach at least one of the slave nodes comprising an emergency status messaging module.

White teaches the further recited limitation above at the abstract with respect to the slave nodes sending a state change signal.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Heiserholt* by clarifying an emergency status messaging module.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to monitor the state of a device. In particular, *White* cures the above-cited deficiency by providing the above motivation found at the abstract.

As such to **claims 17-18**, *Heiserholt* discloses the CAN protocol but may not specifically teach an asynchronous and synchronous module.

White teaches the further recited limitation above at the abstract with respect to sending a state change signal.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Heiserholt* by clarifying an asynchronous and synchronous module.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to monitor the state of a device. In particular, *White* cures the above-cited deficiency by providing the above motivation found at the abstract.

As such to **claims 19**, *Heiserholt* discloses the CAN protocol but may not specifically teach wherein at least one of the slave nodes comprises a fault sensing system to identify component faults at the slave node.

White teaches the further recited limitation above at the abstract with respect to collecting state signals from the I/O modules (i.e., slave modules) to response to a change (i.e., failure) at the I/O module, see e.g., the Abstract.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Heiserholt* by clarifying a fault sensing system to identify component faults at the slave node.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to monitor the state of an I/O or slave device. In particular, *White* cures the above-cited deficiency by providing the above motivation found at the abstract.

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As to **claim 26**, see similar rejection to claim 16.

As to **claim 27**, see similar rejection to claim 16.

As to **claim 30**, see similar rejection to claim 19.

As to **claim 32**, see similar rejection to claim 16.

As to **claim 33**, see similar rejection to claim 17.

As to **claim 34**, see similar rejection to claim 18.

As to **claim 44**, see similar rejection to claim 26.

As to **claim 45**, see similar rejection to claim 27.

As to **claim 50**, see similar rejection to claim 19.

13. **Claims 20 and 35** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287,287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view of Bosch Controller Area Network Version 2.0 Protocol Standard to *Motorola*.

As such to **claim 20**, *Heiserholt* discloses the CAN protocol but does not specifically teach using a CRC to ensure data integrity on the network.

Heiserholt is silent or deficient to using a CRC to ensure data integrity.

Motorola teaches the further recited limitation above at e.g., section 9.8.1 on page 9-4.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Heiserholt* by clarifying that the CAN protocol uses CRC for error detection.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation

for modifying the reference or to combine the reference teachings would be perform error detection. In particular, *Motorola* cures the above-cited deficiency by providing a motivation found at e.g., section 9.8.1 on page 9-4.

As to **claim 35**, see similar rejection to claim 20.

14. **Claims 56-60 and 62** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287,287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view of U.S. Patent Application 2002/0081039 to *Funahashi et al.* ("*Funahashi*").

As such to **claim 56**, see e.g., figure 2 of *Heiserholt* where a master node is taught as CAN master 42. A slave node for each of a plurality of components of the medical the medical imaging system are taught e.g., as nodes 24 and 30. In particular, in view of figure 1, nodes 24 and 30 represent a plurality of components in a HF shielded room. Note that other nodes are further connected on the bus as shown e.g., in figure 1. The uniform commutations protocol between the master and each of the slave nodes is the CAN protocol, see e.g., column 3, lines 41- 67.

Heiserholt is silent or deficient to generating the medical diagnostic image.

Funahashi teaches the further recited limitation above at e.g., paragraph 0072 on page 5.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Heiserholt* by clarifying that one of the devices e.g., in figure 1 generates an image such that the imaging computer 46 and further disclosed at column 4, lines 1-30 can be used to display a medical diagnostic image.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to display an image of the MRI.

As to **claim 57**, *Heiserholt* discloses a medical image system and components of a medical image system including image acquisition, image processing, user interaction, and monitoring components, see e.g., column 2, lines 52 to column 3, line 30.

As to **claim 58**, the medical imaging system is efficiently managed since the CAN protocol is used as taught by *Heiserholt* at e.g., column 3, lines 40-67.

As to **claim 59**, communications capability is taught since the CAN protocol is used as taught by *Heiserholt* at e.g., column 3, lines 40-67.

As to **claim 60**, communications capability is taught since the CAN protocol is used as taught by *Heiserholt* at e.g., column 3, lines 40-67.

As to **claim 62**, see e.g., figure 3 of *Heiserholt* where the CAN bus 44 has both a "H" and "L" portion.

15. **Claim 61** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287,287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view of U.S. Patent Application 2002/0081039 to *Funahashi et al.* ("*Funahashi*") and in further view of An introduction to CANopen to *Farsi et al.* ("*Farsi*").

As such to **claim 61**, *Heiserholt* discloses the CAN protocol but does not specifically teach CAN Open, see e.g., column 3, lines 41- 67.

Heiserholt and *Funahashi* are silent or deficient to the further limitation of the CAN Open protocol.

Farsi teaches the further recited limitation above at e.g., left-hand column on page 161.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Heiserholt* by clarifying that the CAN protocol is the CAN Open protocol.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to make it possible for devices of different types and markings to be integrated together and to communicate with each other. In particular, *Farsi* cures the above-cited deficiency by providing a motivation found at e.g., left-hand column on page 161, second full paragraph.

16. **Claims 63 and 64** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287,287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view of U.S. Patent Application 2002/0081039 to *Funahashi et al.* ("*Funahashi*") and in further view of U.S. Patent No. 6,907,485 B2 A to *White, III et al.* ("*White*").

As to **claim 63**, see similar rejection to claim 16, 26 or 44.

As to **claim 64**, see similar rejection to claim 27 or 45.

17. **Claims 66 and 69** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287,287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view of U.S. Patent

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Application 2002/0081039 to *Funahashi et al.* (“*Funahashi*”) and in further view U.S. Patent No. 5,404,465 A to *Novakovich et al.* (“*Novakovich*”).

As to **claim 66**, see similar rejection to claim 47.

As to **claim 69**, see similar rejection to claim 50.

18. **Claim 65** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287,287 B1 to *Heiserholt et al.* (“*Heiserholt*”) in view of U.S. Patent Application 2002/0081039 to *Funahashi et al.* (“*Funahashi*”) and U.S. Patent No. 6,907,485 B2 A to *White, III et al.* (“*White*”) and in further view U.S. Patent No. 5,404,465 A to *Novakovich et al.* (“*Novakovich*”).

As to **claim 65**, see similar rejection to claim 46.

19. **Claims 66, 67, 68, 70, and 71** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287,287 B1 to *Heiserholt et al.* (“*Heiserholt*”) in view of U.S. Patent Application 2002/0081039 to *Funahashi et al.* (“*Funahashi*”) and in further view U.S. Patent No. 6,915,444 B2 to *Vasko et al.* (“*Vasko*”).

As to **claim 66**, see similar rejection to claim 47.

As to **claim 67**, see similar rejection to claim 48.

As to **claim 68**, see similar rejection to claim 49.

As to **claim 70**, see similar rejection to claim 51.

As to **claim 71**, see similar rejection to claim 52.

20. **Claim 70** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287,287 B1 to *Heiserholt et al.* (“*Heiserholt*”) in view of U.S. Patent Application

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2002/0081039 to *Funahashi et al.* ("*Funahashi*") and in further view U.S. Patent No. 5,784,547
A to *Dittmar et al.* ("*Dittmar*").

As to **claim 70**, see similar rejection to claim 51.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (571) 272-3123. The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on (571)272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


DWF

Derrick W. Ferris
Examiner
Art Unit 2616


DERRICK FERRIS
PATENT EXAMINER